

## REMARKS

### I. Summary of the Examiner's Action

#### A. Claim Objections

As set forth in paragraph 2 on page 2 of the December 4 Office Action, the Examiner objected to claim 13 because of an informality.

#### B. Claim Rejections

As set forth in paragraph 4 on page 2 of the December 4 Office Action, claims 1 – 24 stand rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

As set forth in paragraph 6 on page 3 of the December 4 Office Action, claims 1 – 2, 8 – 14 and 20 – 24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by United States Patent No. 6,320,173 B1 to Vock (hereinafter “Vock” or “the Vock patent”).

As set forth in paragraph 8 on page 8 of the December 4 Office Action, claims 1 – 6 and 13 – 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent No. 6,654,056 B1 to Perregaux (hereinafter “Perregaux” or “the Perregaux patent”).

As set forth in paragraph 9 on page 12 of the December 4 Office Action, claims 1 – 2, 7, 13 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent No. 6,596,979 B2 to Hou (hereinafter “Hou” or “the Hou patent”).

These rejections are respectfully disagreed with, and are traversed below.

II. Applicants' Response

A. Claim Objection

Applicants have amended claim 13 by replacing “liner” with “linear”. Applicants therefore respectfully request that the objection on this basis be withdrawn.

B. Claim Rejections

1. Rejection under 35 U.S.C. § 112, second paragraph

Applicants have amended claims 1, 13 and 24 thereby obviating any purported ambiguity regarding the claims. Applicants therefore respectfully request that the rejection of claims 1, 13 and 24, and the claims which depend from claims 1, 13 and 24, be withdrawn.

2. Rejection of Claims 1 – 2, 8 – 14 and 20 – 24  
under 35 U.S.C. § 102(b)

Applicants reproduce claim 1 here as a convenience to the Examiner (emphasis added):

1. A method for locating a position of a feature in a scene, comprising the steps of  
forming an image of the feature using a segmented array having a plurality of array subelements each having a linear dimension, wherein each of the array subelements has an output signal; and  
cooperatively analyzing the output signals from at least two spatially adjacent array subelements  
to establish a data set reflective of an extent to which output signals responsive to the image of the feature are produced from exactly one or from more than one of the adjacent array subelements, and  
to reach a conclusion from the data set as to a location of the image of the feature on the segmented array with an accuracy of less than the linear dimension of an array subelement when the output signal is produced from more than one of the adjacent array subelements.

Applicants respectively submit that Vock is seen neither to describe nor suggest the emphasized subject matter of claim 1.

In particular, Applicants' invention is concerned with determining the position of an image on a segmented array to an accuracy of less than the linear dimension of an array subelement using a data set "reflective of an extent to which output signals responsive to the image of the feature are produced from exactly one or from more than one of the adjacent subelements", in other words, the image may be so large that it overlaps two adjacent subelements. The relied-upon portions of the Vock patent do not

describe operations with sufficient particularity to determine whether the claimed operations are performed. In addition, a portion of the Vock patent that is concerned with the position of an image is concerned with a situation where the image of the object (in this instance a golf ball) is much smaller than the IFOV of a detector element. Accordingly, the operations show no appreciation for Applicants' invention as claimed and in fact teach a different method as is apparent from the description at column 10, lines 9 – 45. In the method of Vock since the image of the golf ball is so small it is necessary to track the trajectory of the ball through several pixels as described at column 10, lines 40 – 46 (emphasis added):

“There is also a positional uncertainty for a ball that is imaged to within a given pixel (that is, a ball's position is to first order, known only to within the IFOV). In a preferred embodiment of the invention, therefore, sub-pixel resolution is achieved by considering the ball's track through several pixels, and/or frames, and extracting the most likely position of the ball within a given pixel based upon that track.”

In other words, the method of Vock uses a data set drawn from *non-adjacent* pixels to determine the position of the golf ball. This operates in a different manner from Applicants' invention as claimed, since it operates in a situation where the image of the golf ball is much smaller than the IFOV of a detector. Since each and every limitation in an anticipation rejection has to be found in the relied-upon reference, Applicants respectfully request that the Examiner in a non-final action identify with particularity where exactly the claimed operations of Applicants' invention are either described or suggested in Vock. The non-specific portions relied upon the Examiner and the other

portions referred to above of Vock which teach a different method simply are insufficient to support an anticipation rejection where very specific operations are claimed.

Applicants therefore respectfully request that the rejection of claim 1 on this basis be withdrawn. Applicants also request that the rejection of independent claims 13 and 24 be withdrawn for reasons similar to those set forth above with respect to claim 1, and for reasons having to do with their independently-recited features. Applicants further request that the rejection of dependent claims 2, 8 – 12, 14 and 20 – 23 be withdrawn both because these claims depend from allowable claims and because of the independently-recited features of these claims.

3. Rejections under 35 U.S.C. § 103(a)

Regarding the Examiner's rejection based on the Perregaux and Hou patents, Applicants' Representative counsels the Examiner regarding the standards of a proper *prima facie* obviousness rejection. In the first instance, the Examiner should remember that prosecution of a claim should result in a reviewable factual record. This serves two purposes. First, it implicitly gives Applicants "a fair shot" at supporting the patentability of an invention by ensuring that rejections meet certain minimum requirements. Second, a record is created that may be reviewed on appeal. Accordingly, it is expected that most Applicants will expect – no demand – that the Examiner support an obviousness rejection with an element-by-element analysis where each element is found either implicitly or inherently in a reference.

As a result, in most instances it would be expected that the Examiner would rely on a reference to reject a substantial portion of a claim based on obviousness. How can Applicants contest an Examiner's rejection when most of the substance of the rejection is not based on a prior art reference but instead on suppositions regarding the state of the art that are located in the Examiner's mind? The Examiner is counseled to review the portions of the MPEP regarding "Official Notice", for example 2144.03. Appropriate portions are reproduced here:

"Official notice without documentary evidence to support an examiner's conclusion is permissible only in some circumstances. While 'official notice' may be relied on, these circumstances should be rare when an application is under final rejection or action under 37 CFR 1.113. Official Notice unsupported by documentary evidence should only be taken by the examiner when the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well known.

\* \* \*

It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well-known are not capable of instant and unquestionable demonstration as being well-known. For example, assertions of technical facts in the areas of esoteric knowledge or specific knowledge of the prior art must always be supported by citation to some reference work recognized as a standard in the pertinent art. In *re* Ahlert, 424 F.2d at 1091, 165 USPQ at 420. See also *In re* Grose, 592 F.2d 1161, 1167-68, 201 USPQ 57, 63 (CCPA 1979) ('[W]hen the PTO seeks to rely upon a chemical theory, in establishing a prima facie case of obviousness, it must provide evidentiary support for the existence and meaning of that theory.');

*In re* Eynde, 480

F.2d 1364, 1370, 178 USPQ 470, 474 (CCPA 1973) ('[W]e reject the notion that judicial or administrative notice may be taken of the state of the art. The facts constituting the state of the art are normally subject to the possibility of rational disagreement among reasonable men and are not amenable to the taking of such notice.').

It is never appropriate to rely solely on 'common knowledge' in the art without evidentiary support in the record, as the principal evidence upon which a rejection was based. *Zurko*, 258 F.3d at 1385, 59 USPQ2d at 1697 ('[T]he Board cannot simply reach conclusions based on its own understanding or experience-or on its assessment of what would be basic knowledge or common sense. Rather, the Board must point to some concrete evidence in the record in support of these findings.'). While the court explained that, 'as an administrative tribunal the Board clearly has expertise in the subject matter over which it exercises jurisdiction,' it made clear that such 'expertise may provide sufficient support for conclusions [only] as to peripheral issues.' *Id.* at 1385-86, 59 USPQ2d at 1697. As the court held in *Zurko*, an assessment of basic knowledge and common sense that is not based on any evidence in the record lacks substantial evidence support. *Id.* at 1385, 59 USPQ2d at 1697.

In view of the foregoing, the Examiner's statement at page 8 that

"Perregaux does not explicitly disclose cooperatively analyzing the output signals from at least two spatially adjacent subelements to establish a data set reflective of an extent to which output signals responsive to the image of the feature are produced from exactly one or from more than one of the adjacent array subelements and to reach a conclusion from the data set as to a location of the image of the feature on the segmented array with an accuracy of less than the linear dimension when the output signal is

produced from one or more than one of the adjacent array subelements.  
However, determining feature locations and cooperatively analyzing adjacent array subelements, for document generation or document reproduction devices such as digital scanners, copiers and facsimile machines would be routinely performed by any appropriate software or microprocessing function within the device in order to convert and place the detected signals in the proper location in the device's memory"

is unavailing and insufficient in view of the MPEP guidelines and also illustrates the very danger the MPEP cautions against because the paragraph betrays a misunderstanding of the operation of scanners, copiers and facsimile machines, and also a misunderstanding of the distinction between such devices and position-determining sensors. The sampling and readout process from a scanning element in these devices preserves the relative orientation of the samples. For example, in a two-dimensional array, the samples from the array are stored in such a way that they can be reproduced in a two-dimensional array so that the relative position of the samples is preserved. There is no need to perform additional operations in such devices, since the need addressed in Applicants' invention for increased resolution is not present.

Applicants respectfully request that the Examiner locate documentary references that support his conclusions regarding the state of the art. In the absence of the ability to do so, Applicants respectfully request that the Examiner withdraw the rejection of the claims based on the Perregaux and Hou references.



III. Conclusion

The Applicant submits that in light of the foregoing remarks the application is now in condition for allowance. Applicant therefore respectfully requests that the outstanding rejections be withdrawn and that the case be passed to issuance.

Respectfully submitted,

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Date

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